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UNITED STATES DISTRICT COURT

CENTRAL DISTRICT OF CALIFORNIA

ENTROPIC COMMUNICATIONS, LLC,

Plaintiff,

v.

DIRECTV, LLC; AT&T, INC.; AT&T SERVICES, INC.; AND AT&T COMMUNICATIONS, LLC

Defendants.

Lead Case No. 2:23-cv-01043-JWH-KES

Consolidated with Case Nos.:
2:23-CV-01047-JWH-KES
2:23-CV-01048-JWH-KES
2:23-CV-05253-JWH-KES

Assigned to Hon. John W. Holcomb

DIRECTV'S NOTICE OF MOTION AND RULE 12(b)(6) MOTION TO DISMISS UNDER 35 U.S.C. § 101

Date: December 15, 2023
Time: 9:00AM
Courtroom: 9D

NOTICE OF MOTION AND MOTION TO DISMISS

PLEASE TAKE NOTICE that on December 15, 2023, or as soon as this matter may be heard in Courtroom 9D before the Honorable John W. Holcomb, of the above-entitled Court located at 411 W. 4th Street, Santa Ana, California 92701, defendants DIRECTV, LLC and AT&T Services, Inc. (collectively "DIRECTV") hereby do move to dismiss Counts I, III, IV, VI through X, and XII with prejudice because the asserted patents identified in those counts are invalid as a matter of law under 35 U.S.C. § 101 for claiming patent ineligible subject matter. DIRECTV joins and incorporates by reference the motion (Dkts. 50, 60, 75) and Order (Dkt. 103) invalidating U.S. Patent Nos. 10,257,566 (the "'7566 Patent") and 8,228,910 (the "'910 Patent") in *Entropic Commcn's, LLC v. DISH Network Corp.*, Case No. 2:23-cv-1043-JWH-KES, Dkt. 103 (C.D. Cal. Sept. 6, 2023). With respect to U.S. Patent Nos. 9,838,213 (the "'213 Patent") (Count VIII) and 10,432,422 (the "'422 Patent") (Count IX), DIRECTV joins and incorporates by reference the pending motion and related briefing in *Entropic Commcn's, LLC v. Cox Commcn's, Inc*. arguing that these patents are invalid for claiming ineligible subject matter under § 101. Case No. 2:23-cv-1047-JWH-KES, Dkts. 64, 69 (C.D. Cal. June 16, 2023) (motion to dismiss '213 and '422 Patents under § 101).

This motion is made pursuant to Fed. R. Civ. P. 12(b)(6) and the Local Rules applicable thereto.[1] This motion is based on this notice of motion and motion, the accompanying memorandum of points and authorities, the pleadings on file in this action, the Declaration of David S. Frist, the motion to dismiss briefing filed by DISH in *Entropic Commcn's, LLC v. DISH Network Corp..*, Case No. 2:23-cv-1043-JWH-KES (Dkts. 50, 60, 75) and the motion on the pleadings briefing filed by Cox in *Entropic Commcn's, LLC v. Cox Commcn's, Inc.*, Case No. 2:23-cv-1047-JWH-KES (C.D. Cal.

[1] Defendants again move to dismiss jointly, consistent with the Court's prior order allowing a joint motion to dismiss of no more than 35 pages (ECF No. 41 in the DIRECTV case pre-consolidation, Case No. 2:23-cv-05253-JWH-KES).

June 16, 2023) (Dkts. 64, 69), and on such other written or oral argument or evidence as may be presented at or before the time this motion is taken under submission.

This motion is made following the conference of counsel pursuant to L.R. 7-3 which took place on October 25, 2023.

Dated: November 1, 2023

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2:23-CV-05253-JWH-KES

Assigned to Hon. John W. Holcomb

MEMORANDUM OF POINTS AND AUTHORITIES IN SUPPORT OF DIRECTV'S RULE 12(b)(6) MOTION TO DISMISS UNDER 35 U.S.C. § 101

Date: December 15, 2023
Time: 9:00AM
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STATUTES

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I. INTRODUCTION

Plaintiff Entropic Communications, LLC ("Plaintiff" or "Entropic") alleges that DIRECTV, LLC and AT&T Services, Inc. (collectively "DIRECTV") infringe 12 patents that Entropic contends are essential to the Multimedia over Coax Alliance ("MoCA") standard. A prior owner of the patents-in-suit (Entropic Communications, Inc.) was involved in MoCA standardization and made promises to license its patents on reasonable and non-discriminatory terms, but Plaintiff Entropic is now using this lawsuit to seek astronomically high royalties from DIRECTV for its MoCA products.

Contrary to Plaintiff Entropic's story of innovation, the MoCA standard simply applies well-known network communication principles to communication over coaxial cables. Thus, while Entropic touts the overall benefits of the MoCA standard, it is important to look at each patent and identify the alleged problem the patent addressed and how it solved that problem.

When analyzed individually, it becomes clear that a disproportionate number of them claim ineligible subject matter. While the proposed problem and solution described in the specification of each patent are framed in the context of MoCA, the focus of the claims is an abstract idea. While, in some cases, the asserted patents take an abstract idea from conventional networking and apply it to a coaxial network, the Federal Circuit has made clear that simply applying an abstract idea to the use of conventional or generic technology, particularly in a well-known environment (such as a cable network), without more is insufficient to confer patentability. Use of coaxial cables in a communications network was prevalent prior to the filing of the asserted patents, and thus the claims must be directed to an inventive concept that transforms the claims beyond mere abstract ideas.

After DIRECTV filed a motion to dismiss the original complaint, Entropic filed an amended complaint to inject further allegations in an attempt to support its forthcoming opposition. These specific allegations are woefully deficient. Instead of articulating facts, Entropic's allegations are merely conclusory statements regarding

what was or was not well-understood, routine, or conventional at the time the patent applications were filed. The Federal Circuit has made clear that such conclusory allegations are insufficient to defeat a motion to dismiss under 35 U.S.C. § 101. Entropic cannot identify a transformative inventive concept, and the patents challenged herein are invalid under 35 U.S.C. § 101.

This Court should thus dismiss Counts I, III, IV, VI through X, and XII of Entropic's First Amended Complaint because the asserted patents claim patent ineligible abstract ideas.

II. FACTUAL BACKGROUND AND CHALLENGED PATENTS

Entropic filed the present case against DIRECTV, alleging infringement of 12 patents. Motions to dismiss based on subject matter eligibility under 35 U.S.C. § 101 have been filed on four of these patents, two of which were granted and two of which remain pending. *Entropic Commcn's, LLC v. DISH Network Corp.*, Case No. 2:23-cv-1043-JWH-KES, Dkt. 103 (C.D. Cal. Sept. 6, 2023) (hereinafter "DISH Order") (finding U.S. Patent Nos. 10,257,566 (the "'7566 Patent") and 8,228,910 (the "'910 Patent") ineligible under § 101, and dismissing infringement claims with prejudice); *Entropic Commcn's, LLC v. Cox Commcn's, Inc.*, Case No. 2:23-cv-1047-JWH-KES, Dkt. 64 (C.D. Cal. June 16, 2023) (pending motion to dismiss U.S. Patent Nos. 9,838,213 (the "'213 Patent") and 10,432,422 (the "'422 Patent")).

DIRECTV filed a motion to dismiss Counts VI and VIII–X corresponding to the '7566 and '910 Patents and the '213 and '422 Patents as well as five additional patents: U.S Patent Nos. 8,363,681 (the "'681 Patent"), 7,889,759 (the "'759 Patent"), 7,295,518 (the "'518 Patent"), 8,621,539 (the "'539 Patent"), and 8,085,802 (the "'802 Patent"). Case No. 2:23-cv-05253-JEW-KES, Dkt. 45.

Entropic subsequently filed an Amended Complaint (Dkt. 135), asserting the same 12 patents but adding additional allegations in an attempt to address DIRECTV's Motion. Dkt. 135. DIRECTV again moves to dismiss the '681 Patent, the '759 Patent,

the '518 Patent, the '539 Patent, and the '802 Patent.[2] In addition to the grounds asserted below, DIRECTV formally joins in and incorporates herein the motions to dismiss filed in the prior cases as to other patents. *DISH Network*, Dkts. 50, 60, 75; *Cox Commc'ns*, Dkts. 64, 69.

III. APPLICABLE LAW

The Supreme Court has set forth a two-part test for determining patent ineligibility: "(1) it is 'directed to' a patent ineligible concept, i.e., a law of nature, natural phenomenon, or abstract idea, and (2), if so, the particular elements of the claim, considered 'both individually and as an ordered combination,' do not add enough to 'transform the nature of the claim' into a patent-eligible application.'" *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016) (quoting *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 573 U.S. 208, 217 (2014)). In performing this second step, a court must "search for an 'inventive concept'—i.e., an element or combination of elements that is 'sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.'" *Alice*, 573 U.S. at 217-18 (citation omitted). "Ultimately, [t]he § 101 inquiry must focus on the language of the Asserted Claims themselves, and the specification cannot be used to import details from the specification if those details are not claimed." *ChargePoint, Inc. v. SemaConnect*, 920 F.3d 759, 769 (Fed. Cir. 2019) (quotations omitted). The Federal Circuit has "repeatedly recognized that in many cases it is possible and proper to determine patent eligibility under 35 U.S.C. § 101 on a Rule 12(b)(6) motion." *Genetic Techs. Ltd. v. Merial L.L.C.*, 818 F.3d 1369, 1373-74 (Fed. Cir. 2016).

IV. ARGUMENT

A. The '681 Patent Claims of Count XII Are Patent Ineligible

[2] This motion thus does not attack all of the asserted patents. Instead, it addresses the patents that are most amenable to invalidation at the Rule 12 stage (without the need for evidence beyond the pleadings and judicial notice) that have not already been raised by another defendant. DIRECTV reserves the right later to challenge patents that may require more of an evidentiary record, and their omission here should not be construed as a waiver of §101 grounds.

The '681 Patent is titled "Method and apparatus for using ranging measurements in a multimedia home network." Entropic dubbed it the "Clock Synch Patent" (Dkt. 1[3], ¶ 5), and alleges that it "is generally directed to, inter alia, improving local clock time synchronization between a plurality of nodes in a communication network." Dkt. 135, ¶ 635. DIRECTV agrees that the '681 Patent is directed to synchronizing clock times. But that is precisely the problem. Synchronizing time is an abstract idea, and the claims do not contain an inventive concept sufficient to transform it into patentable subject matter. *Alice*, 573 U.S. at 225-26. The '681 Patent is directed to patent ineligible subject matter.

1. '681 Patent's Time Synchronization Method

Problem and Purported Solution. The '681 Patent attempts to describe the problems facing the industry by describing the formation of the Multimedia over Coax Alliance ("MoCA") and the first release of the MoCA standard. '681 Patent, 1:58-2:3. The '681 Patent discloses that a MoCA network typically includes multiple client nodes, and that one of the nodes is selected as a network coordinator ("NC"), which is responsible for scheduling traffic on the network. *Id.*, 2:27-32. The '681 Patent acknowledges that these nodes could be any type of device capable of communicating on a network, such as a TV, set top box, or a computer. *Id.* The '681 Patent then describes that, "[i]n order to facilitate the scheduling, the NC and each node in the network maintains a local channel time clock (CTC) counter and all nodes are responsible for synchronizing their CTC counts to that of the NC." *Id.*, 2:44-47. The problem identified by the '681 Patent is the introduction of inaccuracies to the channel time clock in a network. *Id.*, 3:1-14.

While the '681 Patent presents the problem in the context of MoCA, the purported invention and proposed solution is not so limited. Instead, the '681 Patent proposes to "use[] ranging to improve network efficiency . . . [by] improv[ing] local

[3] All references to Dkt. 1 are to the Original Complaint filed in Case No. -05253 before consolidation.

clock time synchronization" without limiting the purported invention to any type of network or architecture. *Id.*, 3:55-58. The '681 Patent expressly states that the "claimed invention is not restricted to the illustrated example architectures or configurations, but the desired features can be Implemented using a variety of alternative architectures and configurations." *Id.*, 11:23-30. The '681 Patent even concedes that it would be readily apparent how to implement the proposed solution in any functional, logical, or physical configuration. *Id.* ("[I]t will be apparent to one of skill in the art how alternative *functional, logical or physical partitioning and configurations* can be implemented to implement the desired features.") (emphasis added). Thus, the '681 Patent is directed to improving clock time synchronization using any implementation that employs the concept of ranging.

Claim 1 of the '681 Patent is representative. Entropic asserts Claims 1-3 and 6-10 of the '681 Patent.[4] Claim 1, the only asserted independent claim, recites:

> 1. A method for synchronizing a plurality of nodes on a communication network, comprising:
>
> exchanging a local clock time between a first node and a second node over the communication network, wherein the exchange comprises:
>
> > transmitting a first packet from the first node to the second node, wherein the first packet includes a first packet clock time set to the local clock time of the first node at transmission time, and includes a scheduled arrival clock time, and
> >
> > setting the local clock time of the second node to the first packet clock time;
>
> performing a ranging method between the first and second nodes based on the local clock time exchanged, wherein the ranging method results in an estimated propagation delay between the first and second node, and wherein the ranging method comprises:

[4] Entropic's Disclosure of Asserted Claims and Infringement Contentions is attached as Exhibit 6.

transmitting a second packet from the second node to the first node, wherein the second packet is transmitted from the second node at the scheduled arrival clock time, and wherein the second packet is received by the first node at an actual arrival clock time,

calculating and storing the estimated propagation delay at the first node, wherein calculating the estimated propagation delay is based on the scheduled arrival clock time and the actual arrival time, and

transmitting a third packet from the first node to the second node, wherein the third packet comprises the estimated propagation delay; and

adjusting the local clock time of either the first or second node based on the estimated propagation delay, thereby resulting in a synchronized local clock time between the first and second node.

Certain dependent claims are directed to exemplary contexts in which the claimed steps can be used, such as: (i) having the "first node" be "a network coordinator" (claim 6); (ii) performing the steps as part of an admission to the network (claim 7); (iii) performing the claimed steps periodically (claim 8); (iv) where the communication network is a mesh network (claim 9); and (v) "having the communication network operate in accordance with a Multimedia over Coax Alliance (MoCA) standard" (claim 10). As these claims only provide exemplary contexts for performing the method, these dependent claims do not alter the overall focus or character of the claims as a whole.

Other dependent claims add steps to the claimed method, but the additional steps similarly do not alter the focus of the claims. For example, certain claims require storing the estimated propagation delay (claim 3) while others require "using the synchronized local clock time in subsequent packet transmission" (claim 2). The focus of the claims, even with these additions, is synchronizing clock times.

The dependent claims do not add limitations that alter the ineligibility analysis. Claim 1 is thus representative for purposes of patent ineligibility. *See Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat'l Ass'n*, 776 F.3d 1343, 1348 (Fed. Cir. 2014).

2. *Alice* Step 1: Focus of '681 Patent Claims Is an Abstract Idea

The claims of the '681 Patent fail the first step of the *Alice* inquiry because the focus of the claims and their character as a whole is directed to the abstract concept of synchronizing local clock times. *See SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1167 (Fed. Cir. 2018); *Implicit, LLC v. Ziff Davis, Inc.*, No. 2:22-cv-09453-AB-AFMx, 2023 WL 4366351, at *3 (C.D. Cal. July 3, 2023) (claims directed to concepts of data synchronization are abstract).

The claims of the '681 Patent recite steps of (i) transmitting from a first node to a second node two pieces of information (a local clock time and a scheduled time for a response); (ii) setting a clock in the second node to the local clock time; (iii) transmitting a packet from the second node back to the first node at the scheduled time; (iv) calculating and storing a delay at the first node using the scheduled time; (v) informing the second node of the delay; and (vi) adjusting the local clock time at one node to improve the synchronization between the nodes.

While these steps include the steps of transmitting information, calculating a delay, and setting a clock, the claims are silent as to (1) how to transmit the identified packets; (2) how to "calculate the propagation delay;" and (3) how to "adjust[] the local clock time" to achieve "a synchronized local clock time." The claims are "directed to a function, instead of 'a particular way of performing that function.'" *See DISH Order* at 15 (quoting *Affinity Labs of Tex., LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1258-59 (Fed. Cir. 2016)).

To the extent Entropic argues that the inventive steps relate to the transmission of clock times and analysis of the delay, this Court has recognized that "patents that are directed to transmitting and receiving information generally fail *Alice* Step One." *DISH Order* at 9; *see also Maxell, Ltd. v. VIZIO, Inc.*, 2023 WL 3431898, at *7 (C.D. Cal. Apr. 19, 2023) ("It is well established that transmitting and receiving data is an abstract idea."); *Dropbox, Inc. v. Synchronoss Techs., Inc.*, 815 F. App'x. 529, 537 (Fed. Cir. 2020) (finding claims directed to "'[f]ormatting' data, 'transmitting' data, and

'retrieving' data" abstract); *Affinity Labs*, 838 F.3d at 1261 (finding claims directed to "the conveyance and manipulation of information" abstract).

Therefore, the focus of the claims is an improved time synchronization, not an improved communications network. The breadth of this abstract idea is illustrated by the fact that the steps could be performed by a human using pen and paper. The Federal Circuit has made clear that it "treat[s] analyzing information by steps people [could] go through in their minds, or by mathematical algorithms, without more, as essentially mental processes within the abstract-idea category." *Elec. Power Grp.*, 830 F.3d at 1354; *see also Implicit*, 2023 WL 4366351, at *3 (claims directed to synchronizing data could be performed "mentally or using a pen and paper").

For example, the need for clock synchronization between disparate nodes has been known for well over a century. During the railway age of the 1800s the variations in local clock times were a documented issue, resulting in a variety of efforts and techniques to "synchronize" the time between disparate train stations.[5] Station masters relied on charts reflecting the differences in local clock times to create synchronized schedules for train travel. The '681 Patent is so broad as to in fact preempt the use of the claimed synchronization techniques in that context:

Claim 1 of the '681 Patent	Keeping the Trains on Time
A method for synchronizing a plurality of nodes on a communication network, comprising:	Sending messages between train stations to synchronize time.
exchanging a local clock time between a first node and a second node over the communication network, wherein the exchange comprises: transmitting a first packet from the first node to the second node, wherein the first packet includes a first packet clock time set to the local clock time of the first node at transmission time, and includes a scheduled arrival clock time, and;	A messenger at a first station carries a note from the train master on a departing train reading "The train departed at 8 am. I expect a return message at 10 am."

[5] https://www.trains.com/trn/railroads/history/how-railroads-standardized-time-in-the-us/

Claim 1 of the '681 Patent	Keeping the Trains on Time
Setting the local clock time of the second node to the first packet clock time	Upon receipt of the note from the messenger, a train master at a second station sets his clock time to 8 am.
Performing a ranging method between the first and second nodes based on the local clock time exchanged, wherein the ranging method results in an estimated propagation delay between the first and second node, and wherein the ranging method comprises: transmitting a second packet from the second node to the first node, wherein the second packet is transmitted from the second node at the scheduled arrival clock time,	The messenger waits at the second station and then boards a train back to the first station at 10 am.
and wherein the second packet is received by the first node at an actual arrival clock time	The messenger arrives back at the first station at an actual arrival time.
calculating and storing the estimated propagation delay at the first node, wherein calculating the estimated propagation delay is based on the scheduled arrival clock time and the actual arrival time, and	The train master at the first station calculates delay using the 10 am scheduled arrival time of the return message and the actual arrival time. The train master notes the delay.
transmitting a third packet from the first node to the second node, wherein the third packet comprises the estimated propagation delay; and	The messenger then returns to the train master at the second station with a message indicating the estimated delay.
adjusting the local clock time of either the first or second node based on the estimated propagation delay, thereby resulting in a synchronized local clock time between the first and second node.	One of the train masters adjusts the clock time at their train station to reflect the delay.

Trains, postal, or telegraph systems can be used in "communication network[s]", stations can be nodes, and there is nothing in the claims of the '681 Patent that is a particular technical improvement, or even a particular type of communication network. This is a ridiculous result, showing the breadth of preemption risked by Plaintiff's patent on this abstract idea. *See, e.g.*, *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015) ("[P]reemption may signal patent ineligible subject matter.").

3. *Alice* Step 2: '681 Patent Claims Lack an Inventive Concept

The claims of the '681 Patent cannot survive the second step of the *Alice* inquiry

because they do not include "an inventive concept sufficient to transform the claimed abstract idea into a patent-eligible invention." *Yu v. Apple Inc.*, 1 F.4th 1040, 1045 (Fed. Cir. 2021), *cert. denied*, 142 S. Ct. 1113 (2022). The claims of the '681 Patent, at most, rely on generic computer equipment to perform the claimed abstract idea of clock synchronization. *Elec. Commc'n Techs., LLC v. ShoppersChoice.com, LLC*, 958 F.3d 1178, 1183 (Fed. Cir. 2020) (use of conventional components does not provide an inventive concept). The claimed steps are performed using a variety of generic elements such as "nodes" and a "communication network." However, as described earlier, the '681 Patent is directed to any architecture and configuration and any "functional, logical or physical partitioning" and the claims do not provide any specific hardware, architecture, or configuration.

The claims' reference to a communication network also does not transform the focus of the claims. Courts have held that a "telecommunications system" is nothing more than a generic component, insufficient to serve as an inventive concept. *See, e.g.*, *British Telecomms. PLC v. IAC/InterActiveCorp*, 381 F. Supp. 3d 293, 314 (D. Del. 2019), *aff'd*, 813 F. App'x 584, 587 (Fed. Cir. 2020). Similarly, use of "generic, 'off the shelf'" "communication unit[s]" and "control unit[s]" such as televisions and phones was insufficient to supply an inventive concept to claims directed to sending information. *Maxell*, 2023 WL 3431898, at *5. Like in *Maxell*, the '681 Patent specification explains that the "nodes" could be generic components such as "TV's" "set top boxes" and "computers." '681 Patent, 2:27-28. Applying the abstract idea of synchronizing clocks to the clocks inside of generic "nodes," and completing that process using any "communication network," is insufficient to provide an inventive concept. Similarly, use of generic "computer executable program code" or instructions in certain independent claims is irrelevant to the ineligibility analysis. *See, e.g.*, '681 Patent, cls. 11, 31; *see also Ficep Corp. v. Peddinghaus Corp.*, No. 2022-1590, 2023 WL 5346043, at *6 (Fed. Cir. Aug. 21, 2023) (finding claims reciting "a programmable logic controller, a receiver, a database unit" lacked an inventive concept).

The conclusory allegations in the Amended Complaint that each of the elements of claim 1 were not "routine, conventional, or well-known" (Dkt. 135, ¶¶ 192-95) are not entitled to any weight and cannot rewrite the express disclosure in the '681 Patent that the purported invention can be performed with any hardware or software. *Sanderling Mgmt. Ltd. v. Snap Inc.*, 65 F.4th 698, 706 (Fed. Cir. 2023) (finding that a district court is not required to credit conclusory statements regarding whether the claimed steps were well-known, routine, and conventional in the context of a motion to dismiss); *see also Trinity Info Media, LLC, v. Covalent, Inc.*, 72 F.4th 1355, 1366 (Fed. Cir. 2023 (holding that "conclusory allegations that the prior art lacked elements of the asserted claims are insufficient to demonstrate an inventive concept."). Entropic's allegations regarding the alleged improvements to coaxial networks are also irrelevant because the '681 Patent is not limited to a conventional coaxial network. Instead, the '681 Patent is directed to any communication network. The generic communication components of the '681 Patent fail to provide an inventive concept, and thus the claims are ineligible under 35 U.S.C. § 101.

B. The '759 Patent Claims of Count III Are Patent Ineligible

According to Entropic, the '759 Patent enables "establishing a common modulation scheme" in a network. Dkt. 135, ¶ 320. The claimed determination of a common modulation scheme is the type of idea that courts have long held to be abstract, and the claims, which merely require transmitting and analyzing information to facilitate the determination, do not contain a transformative inventive concept. Thus, the claims of the '759 Patent are directed to patent ineligible subject matter.

1. '759 Patent's Bit Loading Modulation Scheme Determination

Problem and Purported Solution. The '759 Patent identifies a need for "a system and method to connect a variety of CPEs into a local network . . . while allowing the utilization of an existing coaxial cable network within the building." '759 Patent, 3:66-4:3. The '759 Patent describes that "[i]t is appreciated by those skilled in the art that the different channels typically utilize different bit-loading modulation schemes

because the channels are physically and electrically different in the cable network." *Id.*, 7:5-8.

Bit loading is a technique that was commonly used prior to the '759 Patent. '518 Patent, 4:57-62, 8:9-1'759 Patent, 7:12-18 (incorporating by reference the description of bit loading in the application that led to the '518 Patent). The '759 Patent explains that "[b]it-loading is the process of optimizing the bit distribution to each of the channels to increase throughput." '759 Patent, 7:12-18. The '759 Patent discloses that the bit-loading modulation scheme can be selected based on transmission characteristics of the channel, and skilled artisans would have appreciated that a channel's transmission characteristics may be determined by measuring the signal-to-noise ratio ("SNR"), bit-error rate ("BER"), and/or packet error rate ("PER") values of a signal received at a receiving node. *Id.*, 11:5-14.

The '759 Patent is not directed to the process of using a bit-loading modulation schemes in a network or to the hardware or algorithms to implement bit-loading modulation. Instead, the '759 Patent's proposed solution is to "determin[e] a common bit-loading modulation scheme for communicating between a plurality of nodes in the BCN." *Id.*, 4:7-9; 6:63-67. Thus, the focus of the '759 Patent is on how to select or determine which bit-loading modulation scheme to use.

Claim 2 is representative. The claims of the '759 Patent generally require the steps of: (1) transmitting a probe signal, (2) receiving response signals containing bit-loading modulation schemes; (3) comparing the signals; and (4) "determining" a common bit-loading modulation scheme. Entropic asserts claims 1-3. Claim 2 recites:

> 2. A method for determining a common bit-loading modulation scheme for communicating between a plurality of nodes in a broadband cable network ("BCN"), the method comprising:
>
> transmitting a probe signal from a transmitting node within the plurality of nodes to a sub-plurality of receiving nodes within the plurality of nodes;

receiving a plurality of response signals from the sub-plurality of receiving nodes wherein each response signal includes a bit-loading modulation scheme determined by a corresponding receiving node;

determining the common bit-loading modulation scheme from the received plurality of response signals;

receiving the probe signal at one receiving node of the plurality of receiving nodes through a channel path of transmission;

determining the transmission characteristics of the channel path at the one receiving node;

transmitting a response signal from the one receiving node to the transmitting node, wherein the transmission characteristics of the channel path are determined by measuring the bit-error rate ("BER") characteristics of the received probe signal at the one receiving node and

generating the response signal, wherein the response signal utilizes a bit-loading modulation scheme that is generated by the one receiving node in response to determining the transmission characteristics of the channel path,

wherein determining a common bit-loading modulation scheme includes:

comparing a plurality of bit-loading modulation schemes from the corresponding received plurality of response signals; and

determining the common bit-loading modulation scheme in response to comparing the plurality of bit-loaded modulation schemes.

Claims 1 and 3 differ only in the characteristic of the received probe signal measured (i.e., signal-to-noise ratio and packet error rate rather than BER). Accordingly, claim 2 is representative claim for purposes of the patent ineligibility analysis.

2. *Alice* Step 1: Focus of '759 Patent Claims Is an Abstract Idea

The claims of the '759 Patent fail the first step of the *Alice* inquiry because the focus of the claims and their character as a whole is directed to the abstract idea of analyzing and comparing data and determining a common bit-loading modulation scheme. This claimed process falls squarely within the types of claims directed to analyzing and comparing data that courts have repeatedly invalidated. *See, e.g.*, *Elec. Power Grp.*, 803 F.3d at 1353 ("collecting information, analyzing it, and displaying

certain results of the collection and analysis" determined to be abstract ideas); *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1366 (Fed. Cir. 2018) ("parsing," "comparing," "storing," and "editing data" was an abstract idea); *Trinity Info Media, LLC v. Covalent, Inc.*, 562 F. Supp. 3d 770 (C.D. Cal. 2021) (Holcomb, J.) ("[T]he Federal Circuit has found that analyzing and comparing data . . . is also an abstract idea.") (citation omitted), *aff'd*, 72 F.4th 1355 (Fed. Cir. 2023).

Again, as described above, the '759 Patent is not directed the process of using a bit-loading modulation scheme or unique implementation of a modulation scheme. The focus is only selecting or determining which scheme to use, which is nothing more than a mental process: comparing two or more profiles to "determine" a common one. *See, e.g., Elec. Power Grp.*, 830 F.3d at 1355 ("But merely selecting information, by content or source, for collection, analysis, and display does nothing significant to differentiate a process from ordinary mental processes.") (citation omitted).

Indeed, this Court found similar claims to be directed to a mental process in *Trinity Info Media*. In that case, the Court concluded that each limitation of a claim directed to a poll-based networking system performing the following steps, in relevant part, was directed to a mental process: (1) providing a user a first polling question; (2) receiving and storing a selected answer for the question; (3) comparing the answer with those of other users; and (4) displaying user profiles that match. *Trinity Info Media*, 562 F. Supp. at 779, 783. The process claimed in the '759 Patent performs similar mental (or abstract) processes: (i) transmitting a probe signal, (ii) receiving response signals containing bit-loading modulation schemes; (iii) comparing the signals; and (iv) determining a common bit-loading modulation scheme. That these steps are carried out at generic transmitting and receiving nodes does not make them less abstract. *See DISH Order* at 9 (recognizing that "patents that are directed to transmitting and receiving information generally fail Alice Step One" and finding claims directed to transmitting probe signals and receiving response signals patent ineligible).

Further, the claim elements here recite "entirely functional" language, confirming

their abstract nature. *Affinity Labs.*, 838 F.3d at 1258. As this Court has recognized, "[c]laims directed to a function, instead of 'a particular way of performing that function,' are abstract." *DISH Order* at 15 (citation omitted). The claims here are each directed to the function of "comparing" bit-loading modulation schemes and "determining" a common one, without describing how the schemes are compared or how that determination is made. *See also Realtime Data, LLC v. Array Networks Inc.*, Nos. 2021-2251, 2021-2291, 2023 WL 4924814, at *8-*9 (Fed. Cir. Aug. 2, 2023) (finding claims that "fail[] to recite *how* the data is to be analyzed or compressed" to be abstract) (emphasis added). The claims reveal nothing about how a common bit-loading modulation scheme is determined, or how the received bit-loading modulation schemes are "compared" to do so. The focus of the claims is thus on analyzing and comparing data and determining a common bit-loading modulation scheme.

3. *Alice* Step 2: '759 Patent Claims Lack an Inventive Concept

The claims lack an inventive concept that renders them "significantly more" than a claim on comparing bit-loading modulation schemes to determine a common one. The claims seek only to apply that abstract idea to generic computer components such as "transmitting nodes," "receiving nodes," and a "non-transitory computer-readable medium." *See, e.g.*, '759 Patent, cls. 2, 4. As the '759 Patent describes, "nodes" are merely generic "terminals" in a building that may be connected to equipment such as converter boxes, TVs, cable modems, and video game consoles. '759 Patent, 1:55-61. The use of these conventional components does not transform the claims. *See Elec. Commc'n Techs.* 958 F.3d at 1183 (Fed. Cir. 2020) (use of conventional components does not provide an inventive concept); *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 716 (Fed. Cir. 2014) (finding claims patent ineligible where they were "not tied to any particular novel machine or apparatus, only a general purpose computer").

Entropic alleges inventiveness in the abstract ideas of "send[ing] data to, and receiv[ing] data from, other nodes on th[e] network," and "communicat[ing] . . . through the use of broadcast transmissions." Dkt. 135, ¶¶ 94, 97. But an abstract idea "cannot

supply the inventive concept that renders the invention 'significantly more' than that ineligible concept." *BSG Tech.*, 899 F.3d 1281, 1290 (Fed. Cir. 2018). Moreover, Entropic's allegations are conclusory (Dkt. 135, ¶¶ 92, 94-98), and a court "need not 'accept as true allegations that contradict matters properly subject to judicial notice or by exhibit,' such as the claims and the patent specification." *Secured Mail Sols., LLC v. Universal Wilde, Inc.*, 873 F.3d 905, 913 (Fed. Cir. 2017) (citations omitted); *see also Sanderling Mgmt.*, 65 F.4th at 706.

Each element of representative claim 2 is directed to a well-known, routine, or conventional function performed by any generic communication equipment, or is directed to an abstract idea itself. For example, determining transmission characteristics of a channel path, such as BER, PER, and SNR, was routine. *Compare* Dkt. 135, ¶ 96 with '759 Patent, 11:5-14 ("It is appreciate[d] by those skilled in the art that the transmission characteristics of the channel path may be determined by measuring the metric values of the channel path" such as SNR, BER, and PER). Similarly, bit loading was well-known (and Entropic does not allege otherwise). '518 Patent, 4:57-62, 8:9-26 (incorporating a patent "disclos[ing] discrete multi-tone [or OFDM] modulation and a technique for bit loading"). And, as this Court already found, use of probes alone is insufficient to transform an abstract idea to patent-eligible subject matter. *DISH Order* at 11-12.

Claim 2 thus recites a generic process for comparing bit-loading modulation schemes and determining a common one without any novel requirement on the type of components are used. After removing these conventional and well-known elements, what remains in claim 2 is merely the functional objectives of the claims, *e.g.*, "comparing" bit-loading modulation schemes and "determining" a common one. Accordingly, the claims of the '759 Patent lack an inventive concept.

C. The '518 Patent Claims of Count I Are Patent Ineligible

Like the '759 Patent, the claims of the '518 Patent relate to selecting a bit loading scheme using conventional components in conventional ways. The claims are thus

patent ineligible.

1. '518 Patent's Bit Loading Determination

Problem and Purported Solution. The '518 Patent is directed to a solution for selecting a bit loading scheme. The '518 Patent does not claim a system that alters how signals are transmitted in a coaxial cable communication network, propose a new bit loading scheme, or propose a new mechanism for applying bit loading to a network. Instead, the '518 Patent describes how to select a bit loading scheme in a conventional coaxial cable network.

For example, the '518 Patent describes use of orthogonal frequency division multiplexing (OFDM) in a network. Dkt. 1-1, '518 Patent, 7:25-31, 7:49-51. OFDM, which the '518 Patent also refers to as "multi-tone modulation" or "discrete multi-tone (DMT)," is a well-known, prior art technique that distributes data bits over many carriers or subchannels. *Id.*; *see also id.*, 3:37-40, 3:56-61, 4:12-18 (incorporating by reference patents directed to OFDM). The '518 Patent also describes the use of prior art bit loading schemes with OFDM. *See id.*, Abstract. As described with respect to the '759 Patent, bit loading is also a well-known, conventional technique. *Id.*, 4:57-62, 8:9-15; *see also id.*, 8:19-23 (incorporating a patent "disclos[ing] discrete multi-tone [or OFDM] modulation and a technique for bit loading); 8:23-26 (same).

The '518 Patent's alleged improvement is to use and analyze probe messages to determine channel characteristics and select a bit loading scheme. *Id.*, 4:57-62, 9:36-47. A probe message is a "predetermined bit sequence which i[s] known by the receiving device," and from which the receiving device can infer channel characteristics, such as SNR and multipath. *Id.* The receiving device uses the channel characteristics to select a bit loading scheme. *Id.* Again, the focus of the '518 Patent is on the determination of a scheme, not the application of the scheme.

Claim 1 is representative. Claim 1 of the '518 Patent, which is the only asserted claim, recites conventional cable network equipment that implements the functions of (i) transmitting probe messages, (ii) receiving and analyzing probe messages to

determine channel characteristics, and (iii) determining a bit loading profile.

For example, claim 1 recites:

> 1. A data communication network comprising:
>
> at least two network devices, each network device comprising a multi-carrier modulator for modulating data, an up converter for translating the modulated data to an RF carrier frequency, a down converter for translating an RF signal, and a multi-carrier demodulator for demodulating the translated RF signal to produce data; and
>
> cable wiring comprising a splitter with a common port and a plurality of tap ports, and a plurality of segments of coaxial cable connecting between the splitter tap ports and the network devices;
>
> whereby network devices communicate with each other through the cable wiring using multi-carrier signaling;
>
> wherein network devices transmit probe messages through the cable wiring and analyze received probe message signals to determine channel characteristics and bit loading is selected based on the determined channel characteristics.

2. The '518 Patent Claims Are Directed to an Abstract Idea

The focus of the '518 Patent is similar to that of the '759 Patent. Like the '759 Patent, at its core, the claims of the '518 Patent are directed to the abstract concepts of (i) transmitting and analyzing information, and (ii) determining a bit loading scheme.

As described earlier, this Court has recognized that "patents that are directed to transmitting and receiving information generally fail Alice Step One." *DISH Order* at 9. Indeed, "the Federal Circuit has generally found claims abstract where they are directed to some combination of acquiring information, analyzing information, and/or displaying the results of that analysis." *Orcinus Holdings, LLC v. Synchronoss Techs., Inc.*, 379 F. Supp. 3d 857, 868 (N.D. Cal. 2019), *aff'd sub nom. Dropbox*, 815 F. App'x. at 537 (collecting cases). Like the claims directed to "transmitting and receiving information for the purpose of admitting a node to a CCN" that this Court invalidated in the *DISH* Order, the '518 Patent's transmission and receipt of a probe packet to "determine channel characteristics" amounts to nothing more than the oft-rejected

abstract concepts of transmitting and analyzing information. *See* '518 Patent, 4:57-59; *Affinity Labs*, 838 F.3d at 1261 (invalidating claims directed to "the conveyance and manipulation of information").

To the extent that Entropic points to bit loading as inventive, *Two-Way Media* is instructive. In that case, the claimed communications network comprised, in relevant part, the steps of (1) "converting a plurality of streams of audio and/or visual information into a plurality of streams of addressed digital packets;" and (2) routing each stream to one or more users, where the routing is controlled "in response to selection signals received from the users." *Two-Way Media Ltd. v. Comcast Cable Comm'ns, LLC*, 874 F.3d 1329, 1334 (Fed. Cir. 2017). In bit loading, bits are similarly "routed" or allocated to one or more channels, where the routing is controlled in response to "the determined channel characteristics." '518 Patent, 4:48-62; *see also Magnacross LLC v. OKI Data Ams., Inc.*, No. 3:20-cv-01959-M, 2022 WL 992595, at *2, *5 (N.D. Tex. Mar. 31, 2022) (determining that a claim reciting a method of wireless data transmission involving "allocating data from sensors into [] sub-channels in accordance with the data rate for the sensors and the data carrying capacities of the subchannels" was directed to the abstract idea of "processing and transmitting data"). The claim here is even weaker than *Two-Way Media* because it does not actually require the selected bit loading scheme be employed in the network.

Claim 1 of the '518 Patent also does not have the specificity required to transform it from one claiming a functional result. Instead of "identify[ing] how th[e] functional result is achieved by limiting the claim scope to structures specified at some level of concreteness . . . or to concrete action," the claim merely states the functional results of "analyz[ing]" probe messages, "determin[ing]" channel characteristics, and "select[ing]" bit loading without more. *See Realtime Data*, 2023 WL 4924814, at *8 (citations omitted). None of the claims of the '518 Patent specify any particular technique for analyzing the probe messages, determining channel characteristics (nor do they specify which ones), or selecting bit loading. *See id.*, at *8-9 (finding claims

that "fail[] to receive how the data is to be analyzed or compressed" to be abstract).

3. The '518 Patent Claims Lack an Inventive Concept

Because the '518 Patent's claims are directed to the abstract idea of transmitting and analyzing signals to select a bit allocation, the claims must add an "inventive concept" that ensures the patent amounts to significantly more than a patent on the ineligible idea itself. *Alice*, 573 U.S. at 222. The '518 Patent claims nothing more than conventional activities performed on known conventional network equipment, as explained by the specification and prior art incorporated into the patent itself.

Claim 1 recites a "data communication network" that comprises generic "network devices," a "multi-carrier modulator," an "up converter," a "down converter," a "multi-carrier demodulator," and "cable wiring" comprising a "splitter with a common port and plurality of tap ports." '518 Patent, 12:8-19. These well-known, conventional structures are illustrated in Figure 1 of the '518 Patent, which is admitted prior art:

- Coaxial cable data networks were disclosed in the prior art. *See, e.g.*, Frist Decl., Ex. 2 (U.S. Patent No. 6,091,932 ("Langlais")), 1:9:16; '518 Patent, 3:37-40, 3:56-61 (incorporating Langlais by reference).
- Network devices with multi-carrier modulators, up converters, down converters, and multi-carrier demodulators were disclosed in the prior art. *See, e.g.*, Frist Decl., Ex. 2 (Langlais), Fig. 5, 9:9-14 (multi-carrier modulator), 9:25-26 (up converter), 9:36-38 (down converter), 9:38-47 (multi-carrier demodulator); *see also*'518 Patent, 4:8-12 ("techniques for implementing *an OFDM modulator and demodulator*") (emphasis added).
- Network devices that "communicate with each other through the cable wiring using multi-carrier signaling," as required by claim 1, were well-known. *See, e.g.*, '518 Patent, 8:19-26 (incorporating by reference U.S. Patent Nos. 6,438,174 (titled "Multi-carrier transmission system") and 6,259,746 (titled "Method for allocating data and power in a discrete multi-tone communication system").

- Cable wiring with splitters that had common ports and tap ports are described as "commonly used." *See* '518 Patent, 1:53-57.

Entropic characterizes claim 1 as "enabling communication between devices that are connected to the tap (output) ports of a coaxial splitter" or "splitter jumping." Dkt. 135, ¶¶ 64, 67. However, "enabling communication between devices" is "nothing more than the abstract idea of communication over a network for interacting with a device, applied to the context of [conventional coaxial cabling]." *ChargePoint*, 920 F.3d at 768; *see also Alice*, 573 U.S. at 222 ("[T]he prohibition against patenting abstract ideas cannot be circumvented by attempting to limit the use of [the idea] to a particular technological environment"). There is no requirement in the claims that specifies how communication between devices is enabled, how probe messages are transmitted or analyzed, or how to determine channel characteristics or select a bit loading scheme. *DISH* Order at 12 ("[w]ithout an explanation of the mechanism for how the result is accomplished, this purported feature of the invention cannot supply an inventive concept") (quoting *Intell. Ventures I LLC v. Erie Indem. Co.*, 850 F.3d 1315, 1331-32 (Fed. Cir. 2017)).

Entropic also cannot plausibly argue that the use of probe packets to determine channel characteristics, or the selection of bit loading based on said characteristics, supply the inventive concept. As the specification of the '518 Patent admits, "[d]etermination of a channel response, multipath, and SNR profile from a known signal is well known in the art." '518 Patent, 10:10-14. A probe message is one such example of a known signal: it uses "a predetermined bit sequence which i[s] known by the receiving device." *Id.*, 9:37-41. And "[b]y passing a known data sequence through the channel, the response of the channel can be determined, including multipath and SNR profile." *Id.* Selecting bit loading is also a technique well-known in the art. For example, the specification incorporates by reference a patent "disclos[ing] discrete multi-tone [or OFDM] modulation and a technique for bit loading applied to point-to-point twisted pair wirings." *Id.*, 8:19-23, 8:23-26.

To the extent that Entropic argues that "transmit[ting] probe messages" and "analyz[ing] received probe message signals" to select bit loading supply the inventive concept, this Court has rejected similar arguments directed to similar claims. Specifically, in the *DISH* Order, the Court rejected Entropic's argument that "prob[ing] a communication link" and "adapt[ing] transmission parameters for the communication link" contained an inventive feature that would have transformed the abstract idea of "transmitting and receiving information" into patent-eligible subject matter. *DISH Order* at 9, 12. The same analysis applies here.

D. The '539 Patent Claims of Count VII Are Patent Ineligible

The claims of the '539 Patent are directed to the abstract idea of transmitting information and measuring and adjusting parameters and do not contain an inventive concept "sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the ineligible concept itself." *Alice*, 573 U.S. at 225-26. Accordingly, the claims recite patent ineligible subject matter under § 101.

1. '539 Patent's MAC Layer Adaption of Parameters

Problem and Purported Solution. The '539 Patent, entitled "Physical layer transmitter for use in a broadband local area network," purports to address a need for a system that can connect multiple pieces of customer premise equipment ("CPEs") while utilizing existing coaxial cables within a building. '539 Patent, 3:15-17, 4:26-33. The '539 Patent's alleged solution is "[a] physical layer transmitter that communicates between nodes in a broadband cable network by transmitting and receiving packets containing data and control information." *Id.*, Abstract. The '539 Patent also explains that the physical transmitter is "[a] transmitter ("PHY transmitter") for communicating between a plurality of nodes in a multi-media network communication system ('MCNS') utilizing a broadband cable network ('BCN') operating at the physical layer (layer 1) within the ISO/OSI Network Model (or the Link layer of the TCP/IP Network Model) . . . ." *Id.*, 4:37-42.

While the title of the '539 Patent references the "physical layer" and the

specification describes a transmitter "operating at the physical layer (layer 1) within the ISO/OSI Network Model," the claims are directed to the MAC layer (layer 2). As background, the ISO/OSI Network Model is a well-known model that was developed by the International Organization for Standards (ISO) for describing or abstracting the separation of functions in a network. Frist Decl., Ex. 3 (U.S. Patent No. 6,085,248 ("Sambamurthy")), 1:59-66, FIG. 1A.[6]

Importantly, the '539 Patent does not describe any specific hardware or software required to implement the MAC layer. This disclosure is absent because the MAC layer is merely an abstraction for describing a set of functions within part of a communication network architecture. '539 Patent, 8:35-49; FIG. 4. The '539 Patent provides examples of the types of functions that could be performed by the MAC layer (e.g., controlling network resources or encryption key handling), but it notes that the MAC layer could include "other functions related to the management, communications, control and status of communications." *Id*. The '539 Patent, however, fails to describe *how* to carry out those functions, and it does not purport to define specific hardware or software necessary to implement these functions in the MAC layer. Instead, the MAC layer is a reference to any software or hardware for performing functions typically associated with that layer 2 in the OSI model.

Claim 1 of the '539 Patent is representative. Entropic asserts claims 1-7 of the '539 Patent. Claim 1, the only independent claim, describes the MAC layer functionality that is relevant to the alleged invention:

> 1. A modem for communication to at least one node across at least one channel of a coaxial network, the modem comprising:
>
> a transmitter; and

[6] Sambamurthy was cited during the prosecution of the '539 Patent, and is part of the file history. Frist Decl., Ex. 4 (Excerpts from the '539 Patent File History) at 7. As a public record, it is appropriate for the Court to consider this evidence. *Trinity Info Media, LLC v. Covalent, Inc.*, 562 F. Supp. 3d 770, 786 n.86 (C.D. Cal. 2021)

> a MAC layer in signal communication with the transmitter, the MAC layer using at least one probe packet as an echo profile probe to measure node delay spread on the network and the MAC layer optimizing the preamble and cyclic prefix requirements or other parameters in response to the measured node delay spread on the network;
>
> wherein the transmitter communicates the at least one [probe][7] packet.

Here, it is notable that the broad list of functions identified in the specification is not claimed. *See, e.g.*, '539 Patent, 8:35-49. The only claimed requirements of the MAC layer are three functions: (i) communicating with the transmitter; (ii) using at least one probe packet as an echo profile probe to measure node delay spread on the network; and (iii) optimizing the preamble and cyclic prefix requirements or other parameters in response to the measured node delay spread. In other words, the claims are directed to measuring delay spread using a probe packet and optimizing parameters based on the measurement. The claims do not require any specific hardware or any specific method for measuring delay spread or optimizing the parameters. Only the concept of measuring and optimizing is required.

The dependent claims do not alter the focus of the claims. For example, dependent claims 2, 4, 5, and 7 provide additional limitations regarding the content of the payload within the probe packet. The claims do not specify how the MAC layer measures node delay spread or optimizes any parameters. Similarly, dependent claims 3 and 6 add additional requirements regarding how the payload in the probe packet is transmitted (e.g., using conventional techniques like BPSK modulation), but do not specify any specialized hardware or components of the transmitter or add to the functionality of the MAC layer, which is the focus of the claims. Thus, none of the dependent claims alter the overall focus of the claims nor add any limitations that would alter the ineligibility analysis.

2. *Alice* Step 1: Focus of '539 Patent Claims Is an Abstract Idea

[7] "transmit" was changed to "probe" in a certificate of correction.

The claims of the '539 Patent fail the first step of the *Alice* inquiry because the focus of the claims and their character as a whole is directed to the abstract concept of transmitting information and measuring and adjusting parameters. *See SAP*, 898 F.3d at 1167.

As this Court stated, "patents that are directed to transmitting and receiving information generally fail." *DISH Order* at 9; *see also Maxell*, 2023 WL 3431898, at *7 ("It is well established that transmitting and receiving data is an abstract idea."); *see also Dropbox*, 815 F. App'x at 537 (finding claims directed to "'[f]ormatting' data, 'transmitting' data, and 'retrieving' data" abstract); *Affinity Labs*, 838 F.3d at 1261 (finding claims directed to "the conveyance and manipulation of information" abstract).

Additionally, courts have repeatedly invalidated claims directed to the abstract idea of measuring parameters and then adjusting other parameters based on those measurements. For example, in *Elec. Power Grp.*, the Federal Circuit determined that a claim reciting "receiving" data, "detecting and analyzing" events from that data based on a number of parameters, "displaying" the analysis results and measurements, "accumulating and updating" the measurements from the data, and finally "deriving" a composite indicator of reliability based on the measurements was directed to an abstract idea. 830 F.3d at 1353-54 (further collecting cases demonstrating that collecting and analyzing data both fall within the abstract idea category); *see also OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1361-62 (Fed. Cir. 2015) (invalidating claims directed to abstract idea of price optimization that involved: (1) testing prices by sending messages over a network to devices; (2) gathering information about customer reactions to the prices; (3) using that data to estimate outcomes; and (4) selecting a new price based on the estimated outcome).

Here, the '539 Patent's use of a probe packet to gather information about the node delay spread to optimize the preamble, cyclic prefix requirements, or other parameters amounts to nothing more than collecting information and analyzing it with a mathematical algorithm, which are "essentially mental processes within the abstract

idea category." *Elec. Power Grp.*, 830 F.3d at 1354. The claim elements here "lack[] specificity and amount[] to generalized steps using generic computer functionality," which confirms they are directed to an abstract idea. *Smart Authentication IP, LLC v. Elec. Arts Inc.*, 402 F. Supp. 3d 842, 852 (N.D. Cal. 2019).

3. *Alice* Step 2: '539 Patent Claims Lack an Inventive Concept

The '539 Patent claims do not recite any inventive concept as they are directed to an abstract process accomplished with generic computer equipment. For example, the '539 Patent describes "modems" and "nodes" in the context of prior art systems. '539 Patent, 1:36-42 (stating that splitters in a known broadband cable network "distribute downstream signals from the point of entry to various terminals (also known as 'nodes') in the building," and that "[t]he nodes may be connected to various types of Customer Premise Equipment ('CPEs') such as cable converter boxes, televisions, video monitors, cable modems, cable phones and video game consoles."); *id.*, 2:47-51 (noting that "Node Devices may be comprised of numerous well known STB units such as cable television set-top boxes and/or satellite television set-top boxes, as well as various video and multimedia devices typically found in the home or office"). The claimed transmitter is well-known, conventional communications equipment. *See Fitbit Inc. v. AliphCom*, No. 16-cv-00118-BLF, 2017 WL 819235, at *13 (N.D. Cal. March 2, 2017) ("A transmitter is a generic component, and [the claim] recites nothing more than using it in a conventional way (i.e., wirelessly transmitting data).").

Further, this generic equipment is used for generic, conventional functions: (1) transmitting information (i.e., a probe packet); (2) using that information to measure a parameter (i.e., node delay spread), and (3) adjusting other parameters in response to the measurement (i.e., preamble or cyclic prefix requirements or other parameters). *See* '539 Patent, cl. 1. Contrary to Entropic's conclusory statement that these limitations are "specific" (Dkt. 135 at ¶¶ 128-130), there are no details about how the MAC layer uses a probe packet to measure delay spread, or how the parameters are adjusted (or even what the parameters are, for that matter). '539 Patent, 9:53-65 (describing an echo

profile probe "whose purpose is to measure node delay spread in order to optimize" parameters without explaining how the underlying functionality is performed). Entropic's attempts to shift the Court's focus from the claims by pointing to allegations that "modems on a conventional coaxial network at the time of the '539 Patent did not communicate with another, and thus did not have a means for measuring the delay on the network or optimizing parameters based on that measurement" fails. Dkt. 135 at ¶ 127; *see also id.* at ¶¶ 131-132. The claims, however, does not require communication between nodes as it only requires transmission by one node in a network. Moreover, such a high level of generality is insufficient to supply an inventive concept. *Ultramercial*, 772 F.3d at 716. The '539 Patent is also silent as to *how* the invention supposedly accomplishes node-to-node communication, and this omission is fatal. *Intell. Ventures I*, 850 F.3d at 1331 ("Nowhere do the claims recite elements or components that describe how the invention overcomes these compatibility issues.")

Moreover, the "probe" and "optimizing" claim elements are analogous to those in the '7566 Patent, which was invalidated by this Court. *See DISH Order* at 12. With respect to the '7566 Patent, the Court found that the steps of "probe a communication link" and "adapt transmission parameters" did not supply an inventive concept because the steps could be implemented using generic components, and Entropic failed to show that steps were unconventional. The claim elements here similarly use a probe to measure node delay spread and use the result to adjust parameters, and the '539 Patent does not indicate that the probe or measurement use anything unconventional.

To the extent Entropic argues that the claims' use of the MAC layer is inventive, the argument necessarily fails. As described earlier, while the '539 Patent provides examples of the types of functions that could be performed by the MAC layer, the '539 Patent fails to describe *how* to carry out those functions, and it does not define specific hardware or software necessary to implement these functions in the MAC layer. Instead, the MAC layer is a reference to any software or hardware for performing functions typically associated with layer 2 in the OSI model. And, importantly, the

claims do not describe *how* the MAC layer uses an echo profile probe to measure node delay spread. *See* '539 Patent, 9:62-65, 10:30-37. Nor do the claims or the specification explain *how* the MAC layer optimizes the preamble, cyclic prefix requirements, or other parameters based on the node delay spread measurement. *See Two-Way Media*, 874 F.3d at 1339; *Affinity Labs*, 883 F.3d at 1258-59. There is also no limitation on what those "other parameters" may be, or how they relate to the supporting communication between devices in existing coaxial cable systems. *Hawk Tech. Sys., LLC v. Castle Retail, LLC*, 60 F.4th 1349, 1357 (Fed. Cir. 2023) (finding claims abstract where neither the claims nor specification explained "what th[e] [claimed] parameters are or how they should be manipulated") (citation omitted).

Because the claims describe the MAC layer only in abstract terms and never fill in the blanks about *how* the MAC layer functions are to be accomplished in software or hardware, the claims fail to impart "any specific components, specific operations, or a specific arrangement of components or operations" and are directed to an abstract idea. *See DISH Order* at 10; *see also Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1241 (Fed. Cir. 2016). Entropic's Amended Complaint does *nothing* to fill these gaps; it summarily alleges that the MAC layer elements "recite a technological capability that was not routine or conventional in existing on-premises coaxial networks" and refers back to the general history of coaxial networks. Dkt. 135 at ¶¶ 133-134. This is not sufficient. *See Sanderling Mgmt. v. Snap Inc.*, 65 F.4th 698, 706 (Fed. Cir. 2023) (declining to give credit to "conclusory statements that the claimed steps were not well-known, routine, and conventional"). Limiting the invention to a particular technological environment (i.e., coaxial networks) does not render the claims any less abstract. *Affinity Labs*, 838 F.3d at 1258-59.

The dependent claims also do not add an inventive concept. As described above, the dependent claims do not specify how the MAC layer measures node delay spread or optimizes any specific parameters. Nor do any the dependent claims alter the functionality of the MAC layer or require any specialized hardware or components. The

requirements of the dependent claims thus fail to impart an inventive concept.

E. The '802 Patent Claims of Count IV Are Patent Ineligible

The claims of the '802 Patent also fail under the *Alice* framework. The claims are directed to the abstract idea of transmitting messages containing specified information and do not contain any additional limitations sufficient to impart an inventive concept.

1. '802 Patent's Predefined Beacon and Data/Control Messages

Problem and Purported Solution. The '802 Patent is titled "Multimedia Over Coaxial Cable Access Protocol" and purports to address the need for "coordinating network resources, access to [a] network, and to optimize the communication" between multiple pieces of customer premise equipment ("CPEs") in a Broadband Coaxial Network ("BCN"). '802 Patent, 3:60-4:3. The '802 Patent's proposed solution is to allow the CPEs, which are equipped with modems for communicating via the BCN, to "communicate using predefined messages to establish, optimize and facilitate data communication." *Id*., Abstract. The '802 Patent explains that "[e]ach BCN modem communicates with the other BCN modems in the network and establishes the best modulation and other transmission parameters that is optimized and periodically adapted to the channel between each pair of BCN modem." *Id.*, 4:20-24.

The '802 Patent does not, however, describe that the BCN modems include any specific hardware or components. Instead, the BCN can be implemented using generic components that were conventional at the time of filing. The BCN modem thus can be any type of node, including existing devices such as "cable converter boxes, televisions, video monitors, cable modems, cable phones, audio video receivers, set-top boxes (STBs) and video game consoles." *Id*., 1:34-38.

With respect to the "predefined messages" to be communicated by the BCN, the '802 Patent suggests using pre-existing packet types. One example is a beacon packet, which is described as one of the "most prevalent packet types" in a BCN. *Id*., 9:31-51. The beacon packet can be used to "identif[y] network timing and essential network

control information." *Id*., 25:13-21, 24:38-49. Another example of a predefined message type is the data transport packet, which can be used to "transfer data between nodes in the BCN network 310," among other functions. *Id*., 10:7-12, 25:21-24.

Claim 3 of the '802 Patent is representative. The '802 Patent recites four claims, all of which are independent. Entropic asserts only claim 3 (shown below), but each claim of the '802 Patent recites similar limitations and claims the same abstract idea of transmitting (or receiving) information:

> 3. A method for transmitting packets from a Broadband Cable Network (BCN) modem to a plurality of nodes in a broadband cable network, the method comprising:
>
> formatting the packets in a MAC subsystem that transmits the packets within the broadband cable network, including formatting a data and control packet for transmission within the broadband cable network,
>
> > *the data and control packet having a header and a variable length payload, the header having at least five fields selected from the group consisting of a transmit clock field, packet type field, packet subtype field, version field, source node ID field, destination node ID field, and header check sequence field;*
>
> receiving the packets from the MAC subsystem at a Modem subsystem that is in signal communication with the MAC subsystem and that appends information to the packets; and
>
> upconverting the packets with the information for transmission via the broadband cable network at a RF subsystem that is in signal communication with the Modem subsystem;
>
> > *wherein at least one of the packets is a beacon packet that has a channel number field, change field, sequence number field, network coordinator ID field, next beacon index field, admission frame length field, admission window, asynchronous MAP length field and a beacon Cyclic Redundancy Checking (CRC) field.*

(emphasis added).

Claim 3 requires three subsystems: (i) a MAC subsystem, (ii) Modem Subsystem, and (iii) RF subsystem. The claim, however, does not provide any specific requirements

about the functionality or hardware required for these subsystems. Instead, the focus is on adding a communication protocol between these known subsystems. Specifically, the claim is directed to the following process of transmitting packets between subsystems: (1) formatting packets to contain specific fields of information; (2) appending "information" to the packets; (3) converting the packets into a different signal format; and (4) transmitting and receiving the packets. The specific packets required by the claim are a beacon packet and data and control packet, which are described as including certain information fields (italicized above).

2. *Alice* Step 1: Focus of '802 Claims Is an Abstract Idea

The focus of these claims is nothing more than the abstract idea of transmitting messages containing the claimed fields of information.

As described above with respect to the '759 and '518 Patents, courts have routinely invalidated claims directed to similar abstract information transmission processes. For example, per this Court, "patents that are directed to transmitting and receiving information generally fail." *DISH Order* at 9; *see also Dropbox*, 815 F. App'x at 537 (finding claims directed to "'[f]ormatting' data, 'tagging' data, 'transmitting' data, and 'retrieving' data" abstract); *Affinity Labs*, 838 F.3d at 1261 (Fed. Cir. 2016) (finding claims directed to "the conveyance and manipulation of information" abstract).

The claimed requirement that the packets include specific information does not salvage the claim. In *Chamberlain Grp. v. Techtronic Indus. Co.*, the Federal Circuit held that a claim for, in relevant part, the wireless transmission of a "status condition signal that: corresponds to a present operational status condition . . . and comprises an identifier" unique to the device was directed to the abstract idea of "wirelessly communicating status information about a system." 935 F.3d 1341, 1348 (Fed. Cir. 2019). Similarly, in *Bridge & Post*, the Federal Circuit found claims for generating an alphanumeric string containing "the local user identifier, instance information, and geographic location and demographic information," and "embedding that alphanumeric string in an extensible field of a packet" such as a portion of the "HTTP header field of

the packet" to be patent ineligible and directed to the abstract idea of "communicating information using a personalized marking." *Bridge & Post v. Verizon Commc'ns, Inc.*, 778 F. App'x 882, 890 (Fed. Cir. 2019).

Like the invalidated claims in *Chamberlain* and *Bridge & Post*, the claims at issue here are directed to no more than the abstract idea of communicating specific information, akin to network status information. For example, the beacon packets may "identif[y] network timing and essential network control information including network admission area, and other information identifying the time location and characteristics of other important and valid information." '802 Patent, 25:13-21. That the claims of the '802 Patent require beacon packet information to include a "channel number field, change field, sequence number field," etc., and for data/control packet information to include a "header and a variable length payload, the header having at least five fields" from an enumerated list, does not transform the focus of the claims into more than the mere transmission of a predetermined list of "status information" fields.

Moreover, "look[ing] to whether the claims in the patent focus on a specific means or method, or are instead directed to a result or effect that itself is the abstract idea and merely invokes generic processes and machinery" confirms that the claims are directed to an abstract idea. *Two-Way Media*, 874 F.3d at 1337. The '802 Patent similarly recites a method for transmitting information using result-based functional language such as "formatting," "receiving," and "upconverting the packets," without specifying how these results are achieved. *See id*. ("The claim requires the functional results of 'converting,' 'routing,' 'controlling,' 'monitoring,' and 'accumulating records,' but does not sufficiently describe how to achieve these results in a non-abstract way."); *see also Dropbox*, 815 F. App'x. at 529 ("'Formatting' data, 'tagging' data, 'transmitting' data, and 'retrieving' data are generalized steps to be performed on a computer using conventional computer activity.").

That the claims are performed in the BCN context does not move the needle. "[M]erely limiting the field of use of the abstract idea to a particular existing

technological environment"—here, coaxial cable networks—does not "render the claims any less abstract." *Affinity Labs*, 838 F.3d at 1258-59. "Just as performance of an abstract idea on the Internet is abstract, so too the performance of an abstract concept in the environment of the telephone network is abstract." *Intell. Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1320 (Fed. Cir. 2016). The same can be said of transmitting information in a coaxial cable environment.

3. *Alice* Step 2: '802 Claims Lack an Inventive Concept

The '802 Patent claims fail under *Alice* Step 2 because they "merely invoke[] well-understood, routine, conventional components and activity to apply the abstract idea identified previously." *Elec. Commc'n Techs.,* 958 F.3d at 1183. The '802 Patent describes its purported invention as "[a] BCN network with BCN modems that communicate *using predefined messages*," including beacon packets and data/control packets with specified information fields. '802 Patent, Abstract (emphasis added). However, the specification of the '802 Patent makes clear that beacon packets and control and data packets were well-known, and their use to store information was conventional in the art. Indeed, the specification describes three "prevalent packet types" conventionally used to transmit information: (1) a "robust packet," which "may be called a beacon;" (2) a probe packet for link optimization; and (3) a "data transport" packet. *Id.*, 9:31-36, 9:44-49, 9:52-54, 10:7-12. The purportedly inventive concept of the '802 Patent is merely specifying the particular fields that the packets must contain. *See Bridge & Post*, 778 Fed. App'x. at 892 ("This limitation merely instructs the user to store information in a known portion of the conventional header field . . . ."). Indeed, Entropic alleges that "the type and formatting of [] communications packets" and "unique data structures" is inventive. Dkt. 135, ¶¶ 101, 112. It is well-recognized, however, that "[c]laim limitations directed to the content of information and lacking a requisite functional relationship [to the medium] are not entitled to patentable weight, because such information is not patent eligible subject matter." *Praxair Distribution, Inc. v. Mallinckrodt Hosp. Prods. IP Ltd.*, 890 F.3d 1024, 1032 (Fed. Cir. 2018).

The claimed "modem subsystem," "MAC subsystem," and "RF subsystem" are also generic components. This is exemplified by the lack of any disclosure of the specific hardware or software necessary to implement those subsystems. And the functional statements regarding the modem, MAC, and RF subsystem all relate to known operations of a modem. For example, the specification describes a "BCN modem" as "a device that communicates across one or more of multiple RF channels where the communications over each RF channel by the various devices is divided by time." '802 Patent, 7:3-14. The medium access control (MAC) layer is described as one layer of "[a] multiple layer protocol model," a well-known model used to describe the abstract layers that computer systems use to communicate over a network. *Id*., 24:38-43. And converting received signals into RF signals at an RF subsystem had long been known. *Id*., 1:55-58, 6:34-44 (describing devices using the Wi-Fi, standard).

Although Entropic alleges inventiveness in "upconverting packets so that the transmitted data is carried on RF frequencies higher than the range typically used by cable TV" (Dkt. 135, ¶ 111), the frequency used is irrelevant—nothing in the claims of the '802 Patent requires a specific frequency. In addition, it was well-known that the coaxial networks could be used for RF signals other than cable RF signals. '802 Patent at 2:30-36 (disclosing that the nodes could include cable television and/or satellite television set top boxes). Accordingly, the claims of the '802 Patent lack an inventive concept and do not specify the precise functional or hardware requirements of the subsystems. Instead, they acknowledge that these subsystems are conventionally used in modems and merely propose an improvement to the type of information contained in certain packets. The subsystems do not provide an inventive concept.

The prosecution history of the '802 Patent further confirms that the subsystems were not part of the inventive concept. During prosecution, the applicant could not obtain a patent merely directed to a RF subsystem, Modem subsystem, and MAC subsystem. *See* Frist Decl., Ex. 5 (Excerpts from the '802 Patent File History) at 3-4 (rejecting claims as anticipated because a single prior art reference "disclose[d] the

BCN modem . . . a MAC subsystem . . . a Modem subsystem . . . and a RF subsystem"). It was only when the applicant amended the claims to require the apparatus to transmit both beacon packets and data/control packets containing specific data that the examiner allowed the claims. *Id*. at 18, 27-29.[8]

F. Joinder to the DISH and Cox Motions

As described earlier, four of the patents asserted in this action have been previously challenged under § 101. First, this Court issued an Order in the DISH case invalidating the '7566 and '910 Patents under § 101. *DISH Order*. As the Court has issued final judgment in the DISH case, Entropic is estopped from asserting the '7566 and '910 Patents here. *See Tse v. Apple, Inc.*, 2015 WL 11367929, at *2 (N.D. Cal. Apr. 14, 2015) (dismissing action with prejudice based on the estoppel effect of a prior judgment of patent invalidity). DIRECTV joins and incorporates by reference the DISH motion and related briefing and the *DISH* Order, and respectfully requests that the Court dismiss Counts VI (the '7566 Patent) and X (the '910 Patent). *See* Dkt. 1, ¶¶ 390-424.

For U.S. Patent Nos. 9,838,213 (Count VIII) and 10,432,422 (Count IX), DIRECTV joins and incorporates by reference the pending Cox motion and related briefing arguing that these patents are invalid for claiming ineligible subject matter under § 101. *Entropic Commcn's, LLC v. Cox Commcn's, Inc.*, Case No. 2:23-cv-1047-JWH-KES, Dkts. 64, 69 (C.D. Cal. June 16, 2023) (motion to dismiss U.S. Patent Nos. 9,838,213 and 10,432,422 under § 101). Accordingly, DIRECTV respectfully requests that the Court dismiss Counts VIII and IX.

V. CONCLUSION

For the foregoing reasons, DIRECTV respectfully requests that the Court find the patents asserted in Counts I, III, IV, VI through X, and XII invalid under 35 U.S.C. § 101 and dismiss those Counts with prejudice.

[8] DIRECTV requests that the Court take notice of the '802 Patent prosecution history. "[C]ourts regularly take judicial notice of public documents from the United States Patent and Trademark Office." *RJ Tech., LLC v. Apple, Inc.*, No. 8:22-cv-01874-JVS (JDEx), 2023 WL 3432237, at *2 (C.D. Cal. Mar. 23, 2023) (citation omitted).

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